great that the two segments cannot be brought into apposition by altering the position of limb, or by traction on the threads, "suture at a distance" must be performed, which as the experiments of Assaky have shown, diminishes the interval which separates the two ends of the divided nerve. By this means, at least in animals, the nervous cicatrix developed along the threads of suture, is richer in nerve fibres of new formation than when we abandon the cure solely to nature.

P. S. ABRAHAM.

HEATH ON CERTAIN DISEASES OF THE JAWS.[1]

Mr. Heath's lectures bear the impress of the many years of study and the careful clinical observation which he has directed to this department of surgery. The subject matter had already been published in a more extended manner in his well-known work on Injuries and Diseases of the Jaws (London, 1884); nevertheless, the concise and readable form in which he has embodied it in his lectures will be welcomed by many who are unfamilar with the larger treatise; and to those who were privileged to hear them the lectures were rendered extremely interesting and instructive by the large number of specimens with which they were illustrated. These comprised not only specimens from the large and complete series in the Royal College of Surgeons' Museum, but in addition many valuable and unique specimens culled from the museums of most of the London hospitals. Mr. Heath commences with a description of the anatomy of the antrum and of the diseases implicating that cavity. He gives rules for diagnosis between suppuration in the antrum and ozeona—sometimes confounded. In suppuration in the antrum there is occasional purulent discharge determined by position of the head, an offensive smell perceptible only to the patient and not to his friends, together with dull aching and often neuralgic pain. The neuralgia sometimes takes the

[1] Lectures on Certain Diseases of the Jaws. Delivered at the Royal College of Surgeons of England, June, 1887. By CHRISTOPHER HEATH, F. R. C. S., Hunterian, Professor of Surgery and Pathology. *Brit. Med. Jour.*, June 11 to July 16, 1887.

form of frontal headache and may lead the surgeon to suppose that the discharge comes from the frontal sinus. The lecturer had twice been consulted in such cases, in which "enterprising surgeons had proposed to trephine the frontal sinus." Distention of the antrum is quite an exceptional symptom of suppuration within it. Drainage by puncture above the alveolus is recommended for various reasons in preference to making an opening through the socket of a tooth, except when a tooth obviously requires extraction. The antrum may be distended by accumulation of inspissated pus and all the symptoms of solid tumour simulated. The particulars of such a case are given, an opening being made into the antrum in the belief that a solid tumour existed. Cases of so-called hydrops antri are probably referable to cysts originating in the antrum or its walls; these fill up the cavity and even distend its walls. In addition to other evidence supporting this view, the fact is of importance that the contained fluid is serous and frequently contains cholesterine instead of resembling mucus, as would be the case if it were simply a secretion of its lining membrane. The description of *cysts in connection with the teeth* is, perhaps, not free from some slight ambiguity. Mr. Heath classifies them as:

"First, cysts connected with the roots of fully developed teeth; and, secondly, cysts connected with imperfectly developed teeth, to which the term dentigerous cyst has been applied in modern times."

Upon this interesting point in the pathology of the jaws much has been written, prolonged controversy has been maintained in recent years by French pathologists, and much confusion has prevailed. The confusion has been in some measure due to the non-appreciation of the epithelial nature of the multilocular cystic disease of the jaws, this affection in its early stage being confounded with cysts more immediately connected, with tooth follicles or the roots of teeth. We recognize two distinct varieties of cysts directly connected with the roots of teeth. First, the inflammatory cysts found in connection with the fangs of permanent teeth after extraction, of which Mr. Heath gives some figures; they are, probably, formed by the exudation of serous or sero-purulent fluid beneath the peri-odental membrane, and their walls consist of granulation tissue. Their origin is purely inflammatory.

Secondly, the recent researches of Malassez have placed beyond doubt the fact that some simple cysts, directly connected with the fangs of teeth, possess a lining of epithelium. They originate in epithelial remains which may be found around the neck and fangs of all teeth and termed by Malassez "epithelium paradentaire."

Of cysts originating in rudimentary tooth follicles or connected with the fangs of teeth, are: First, cysts probably originating by dilatation of the rudimentary enamel organ, of which a probable example described by Mr. F. Eve is referred to by Mr. Heath. Secondly, the dentigerous cysts or secondary cysts of Magitôt. We may also add that cysts probably occur in the jaws altogether comparable in their origin and structure to the dermoid cysts of the integuments, and, again, the cysts containing large numbers of ill-formed dentary bodies may, perhaps, be more corrected considered as teratomata than merely the result of malformation of a simple tooth follicle or, in other words, a dentigerous cyst. Some of the cysts projecting into the antrum may have a similar nature, for among the cases of antral cysts quoted is one recorded by Maissoneuve, in which pressure upon the chest produced a flow of butter-like fluid from the nose.

In speaking of the difficulties of diagnosis of dentigerous cysts the lecturer insists on the advisability of making an exploratory puncture through the mouth in all cases of doubt, stating that the diagnosis of cysts in which the "parchment-like cracking" is absent and some solid tumours is otherwise impossible. His experience of cases of multilocular cystic epithelial disease leads him to agree with the views put forward by Mr. F. Eve, that the disease is essentially malignant, though often in a low degree. It may be considered a peculiar form of epithelioma, the degeneration of the cells leading to the cyst formation being similar to that by which the central cells of the animal organ are destroyed. Two cases of this disease are quoted in which recurrence took place. In one the later recurrent growths were in great part sarcomatous; the other is more interesting in that the primary growth and the first recurrence were purely cystic and were treated simply by gouging, while the second recurrence formed a tumour which sprouted through the chin. Immunity followed excision of the affected portion of the bone.

The second lecture is devoted to a very full consideration of solid tumors of the jaws. We venture to suspect that many of the cases included under the heading of fibroma of the lower jaw were really instances of fibro-sarcoma or spindle-celled sarcoma, and this on both pathological and clinical grounds. We do not question the occurrence of fibroma of the jaws, although such tumours in other bones, except in animals, are almost unknown. Clinically the account of these tumours sounds very much much like malignancy, for we read. "The fibrous tumour grows slowly but surely, involving in its progress the surrounding structures," and again, "Simple fibrous tumours occasionally recur after removal, but it is doubtful whether in these cases the whole of the disease has been eradicated." Again, most of the cases cited occurred many years ago when the fibro-sarcomata were spoken of as fibrous tumors or recurrent fibroids.

An interesting case of a woman under the care of Mr. Liston is quoted in which a very large tumor of the kind under consideration was subject to monthly augmentations of vascularity and slight hæmorrhages after the menopause. The upper jaw may be involved in cartilaginous tumors springing from other bones of the face. In the lower jaw enchondromata occur primarily, both as endosteal and periosteal growths. The central or endosteal tumors may be treated by gouging, and two cases in which this operation was successfully performed, are quoted.

Under the head of osteoma an interesting case of hypertrophy of the jaw in a woman, æt. 25 years, is given. A painless enlargement of the right upper jaw had been noticed for ten years. The jaw was successfully removed, "and on section the tumour was found to be simple bone, very dense, but otherwise healthy." The case is noteworthy from the fact that very similar osseous tumours, causing a general enlargement of the whole upper jaw, have been described from their microscopic appearances as ossifying sarcomata. The jaws are a favorite seat of myeloid sarcoma, which usually occurs in persons under 25. The disease is central, expanding the walls of the bone (except when it takes the form of epulis) and may therefore be mistaken for a cyst. The case of a boy æt. 7 years, under the lecturer's care,

is related. There were symmetrically placed myeloid tumours at each angle of the lower jaw forming prominent projections. The main part of each projection was sawn off and the soft portion of the tumor was removed with the gouge. There appears to have been no tendency to recurrence. The jaws may be attacked both by squamous and columnar epithelioma; the former begins in the gums or palate; the latter in the upper jaw in the antrum. Epithelioma beginning in the tongue and lip may also involve the lower jaw. In regard to treatment it is pointed out that in the case of malignant disease of the lower jaw it is impossible to carry out the plan adopted in the case of other bone, namely, of amputating at the joint above the disease.

A brief notice is given of the now well-known disease of actinomyosis as affecting the jaws. A report by Mossdrugger on cases observed in the Tübingen clinique shows that of 11 cases the disease began in the lower jaw in 6; in the upper jaw in one, and in the cheek and lungs in the remaining 4 cases. Of 75 recorded cases in the human subject 29 were inoculated in the neighborhood of the lower jaw, floor of the mouth and throat and in 9 the upper jaw and cheek. Of the cases treated in the Tübingen clinique, all those involving the jaws, except one in the upper, recovered The operative measures embraced incision and scraping with sharp spoons. The disease started as frequently around sound as carious teeth and always about a molar tooth. The earliest appearances are similar to those of a subperiosteal tumour and severe toothache is a common symptom.

The third lecture deals with disease of the temporo-maxillary articulation and closure of the jaws from various causes. It contains some original observations and some practical advice regarding the operative treatment for the cure of closures of the jaw. The lecturer remarks "that acute disease of the temporo-maxillary joint is hardly recorded," and thinks the explanation may be found in the fact that it is often confounded with acute affections of the ear. Perforation of the floor of the meatus may ensue, and the condyle may find its way into the meatus. He is of the opinion that many cases of "subluxation" are due not to slipping of the inter-articular cartilage but to rheumatic or gouty changes in the articulation, as shown by the history and by the results of treatment.

A full account is given of the curious deformity due to hypertrophy of the neck and condyle of the lower jaw, of which only three cases have been recorded The condyle is much elongated, generally enlarged and somewhat the shape of an inverted pyramid. The chin is pushed forward and towards the opposite side to that on which the disease is situated. In one case the patient was affected with chronic rheumatism, but there was no history or evidence of arthritic disease in the other two cases.

In the case described by Mr. Heath he incised the enlarged condyle with good results. This fact is probably not generally recognized by surgeons that *spasmodic closure of the jaws* may be connected with the eruption of the wisdom teeth of the lower jaw, either from want of room or malposition of the wisdom tooth itself. The affection may be of several weeks, or even of years, duration.

In discussing the operative treatment of permanent closure of the jaws from cicatrices within the mouth or of the cheeks, the author strongly recommends division of the jaw in front of the cicatrix, and prefers Esmarch's operation in which a wedge-shaped portion of the bone is removed to that of Bizzoli, who only divides the bone from within the mouth. He concludes as follows: "In cases of fibrous ankylosis of the temporo-maxillary joint it may be worth while to try division of the adhesions, and, failing in that, to resect the condyle.

"In cases of bony ankylosis of the joint, division of the ramus of the jaw below the masseter seems to me the least dangerous and most satisfactory proceeding."

CERTAIN POINTS IN CONNECTION WITH SYPHILIS.

Prof. E. Lang[1] (of Vienna) relates three cases in which gummatous lesions passed into cancer:

1. A man, æt. 40 years, presented several subcutaneous gummata, and at the same time a hard nodule in the floor of the mouth under the tongue. In spite of specific treatment the latter ulcerated, became papillomatous and finally assumed the character of a true epithelioma.

[1] *Wiener Med. Blätter*, 1886, Nos. 41 and 42.